Alors $\dfrac{z_C - z_O}{z_B - z_A} = \dfrac{i[(\sqrt{3}-1) - i(1+\sqrt{3})]}{(\sqrt{3}-1) - i(\sqrt{3}+i)}$

$= i$ imaginaire pure.

Donc $\overrightarrow{OC} \perp \overrightarrow{AB}$ et on a $OA = OB$

$\Rightarrow$ OACB est un carré

c) $Z = (1+\sqrt{3}) + i(\sqrt{3}-1)$

$|Z| = \sqrt{(1+\sqrt{3})^2 + (\sqrt{3}-1)^2}$

$|Z| = \sqrt{4+2\sqrt{3}+4-2\sqrt{3}} = \sqrt{8} = 2\sqrt{2}$

$|Z| = 2\sqrt{2}$

$\cos\theta = \dfrac{1+\sqrt{3}}{2\sqrt{2}}$; $\sin\theta = \dfrac{\sqrt{3}-1}{2\sqrt{2}}$

$\cos\theta = -\cos\dfrac{11\pi}{12}$; $\sin\theta = \sin\dfrac{11\pi}{12}$

Alors $\boxed{\theta \equiv \dfrac{11\pi}{12} \ [2\pi]}$

Exercice n°4 :

- $z^2 + 18z + 1681 = 0$

$\Delta = 18^2 - 4.(1681) = 324 - 6724 = -6400$

$= (80i)^2$

d'où $\sqrt{\Delta} = 80i$

$z_1 = \dfrac{-18-80i}{2}$; $z_2 = \dfrac{-18+80i}{2}$

$z_1 = -9-40i$; $z_2 = -9+40i$

$\boxed{S_{\mathbb{C}} = \{-9-40i ; -9+40i\}}$

Qarray.tn - Aqra Blech - Qarray.tn - Aqra Blech - Qarray.tn
KADEMIA